

Application No.: 09/626026

Case No.: 54942US002

### REMARKS

Favorable reconsideration of the application is respectfully requested in light of the amendment and the following detailed discussion. Claim 18 has been amended to render the claim more definite, and has not been narrowed in scope. Claims 1, 17, 18 and 41-48 remain pending in the application.

#### § 112 Rejections

Claim 18 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner has objected to the term "eg" in claim 18.

Claim 18 has been amended to delete "[e.g. hydroxyethyl)]." Thus, it is believed that the rejection of claim 18 under 35 U.S.C. § 112, second paragraph, has been overcome, and that the rejection should be withdrawn.

#### § 102 Rejections

I. Claims 1, 17, 18, 41-44, 46 and 47 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Imazato et al. US 5408022 ("Imazato").

With regard to Imazato, the Office Action states that polyisocyanate and polyactive H monomers forming polyurethane polymers (col. 8) are end capped with quaternary antimicrobial groups (col. 4) including the instant claim 18 groups, linked through a vinyl group. The antimicrobial group may be as little as 0.01% of the polymer composition (col. 6, line 11, line 44, col. 7) and are used as medical articles, films, coatings, fibers. It is further stated that the instant open claim language requires polyurethane desired from monomers designated generally, but does not exclude other monomers as part of the polymer, thus, the Imazato polymer formed with hydroxy methacrylate monomer is not precluded.

Claim 1 requires, *inter alia*, a polymeric composition comprising a polyurethane polymer derived from a polyisocyanate compound and a polyactive hydrogen compound, said polyurethane polymer at least partially endcapped at a terminal position with a group including at least one antimicrobial quaternary ammonium group.

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Imazato does not describe the claimed polyurethane polymer. Imazato describes only acrylate polymers using “urethane(meth)acrylic acid” and “urethane(meth)acrylates” monomers in col. 7, not polyurethane polymers. Item iv) of col. 8 of Imazato describes the urethane(meth)acrylate as the reaction product of a (meth)acrylate having a hydroxyl group and a diisocyanate and the reaction product urethane prepolymer having an NCO group at each of its molecular ends and a (meth)acrylate having a hydroxyl group. The product of these reactions is shown by the formula appearing in col. 8, lines 52-58 of Imazato.

The Examiner fails to present any explanation of how such a reaction product, having an acrylate group at each end, would form a polyurethane polymer at least partially endcapped at a terminal position of the polyurethane backbone with a group including at least one antimicrobial quaternary ammonium group, according to the teachings of Imazato. Instead, Imazato appears to suggest using these urethane groups as a crosslinking agent for the acrylate polymers.

Moreover, applicant is unable to identify any suggestion in Imazato for the formation of a polyurethane polymer derived from a polyisocyanate compound and a polyactive hydrogen compound, as required by claim 1. The “polyactive hydrogen compound” recited in claim 1 is defined in the specification as “a polyfunctional compound having more than one active hydrogen moiety capable of a reaction with an isocyanate moiety.” Imazato, at col. 8, refers only to the use of (meth)acrylate having a hydroxyl group.

Thus, it has not been shown that Imazato describes each and every element of the present invention in as complete detail as is contained in claim 1. The rejection of claims 1, 17, 18, 41-44, 46 and 47 under 35 U.S.C. § 102(b) as being anticipated by Imazato is therefore unwarranted and should be withdrawn.

**II.** Claims 41-43, 45 and 48 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Vandegaer et al. US 4110286 (“Vandegaer”).

The Office Action states that Vandegaer teaches that terminal quaternary ammonium groups may be added to the polyurethane, chain extended as desired (col. 6-8) as shown at formula 6. Self supporting films are shown – the film, dry stripped from the plate (col. 14, lines 13-19). Emulsifying in water (col. 2, lines 19-29) then permits coating of substrates, polymeric, textiles, metal, wood, and fibers, paper and felt of claim 43 (col. 18, lines 35-41). The Examiner has taken

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the position that the composition disclosed is that instantly claimed, so then the characteristics, antimicrobial and effective against algae, are also the same.

Claims 41-43 and 48 incorporate all of the limitations of patentable claim 1, and are thus patentable at least on this basis. In addition, it is noted that these claims all require polyurethane polymer at least partially endcapped at a terminal position with a group including at least one **antimicrobial** quaternary ammonium group. Vandegaer is completely silent as to any antimicrobial effect of any of the compositions disclosed therein, and indeed it appears that none of the quaternary ammonium groups described in the examples of Vandegaer would exhibit any appreciable antimicrobial activity.

Moreover, claim 45 defines a polymeric composition comprising a polyurethane polymer derived from a polyisocyanate compound and a polyactive hydrogen compound, said polyurethane polymer at least partially endcapped at a terminal position with a group including at least one antimicrobial quaternary ammonium group, wherein said polymeric composition is soluble in water.

In direct contrast, Vandegaer takes an emulsified pre-polymer and forms a stable polymer latex; that is, the polymer particles form a stable dispersion in water. Thus, the polymer compositions of Vandegaer must be water **insoluble**. Vandegaer fails to teach or suggest the polymeric composition, soluble in water, defined by claim 45, and the rejection of claim 45 should be withdrawn.

In view of the above, it is submitted that the application is in condition for allowance. Entry of the amendments and reconsideration of the application is requested.

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Date

Respectfully submitted,

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